

# **National Rappel Program - Quality Assurance Checklist**

## **XX Region Action Plan**

Date

### **A-Aircraft System**

A3. The aircraft are performing near limits of capabilities due to mission, payload, and environment with constantly changing conditions.

- ☐ A3M2. Ensure rappel operation begins with the helicopter operating within the maximum continuous parameters (Start in the green arc.)
- ☐ A3M3. Ensure strict compliance with flight manual and increased awareness training of aircraft performance for helicopter managers and proper mission planning (including downloading).
- ☐ A3M4. Apply additional downloading to maintain safe operating parameters

A4. There is a lack of a definition of a standard load of rappellers and equipment.

- ☐ A4M1. Develop a rappel mission statement so load parameters can be defined.

A5. There is an inherent hazard posed by helicopters hovering in the height velocity curve in the event of an engine loss or loss of control.

- ☐ A5M3. Single engine operations maintain adequate rotor clearance for emergency landings in the rappel zone.

A7. The spotter tether attachment point is not uniformly defined, tested and designed in some aircraft.

- ☐ A7M1. Ensure spotter tether attachment point is approved with proper and valid STCs, tested annually, installed correctly, and inspected at manufacturer's recommendations.

A8. Aircraft modifications improperly installed and documented could impede the airworthiness of the aircraft.

- ☐ A8M1. Ensure thorough maintenance inspections, documented, verification of STC documentation and compliance, increased training for helicopter managers.

A9. With the doors off or doors open during flight, crash survivability is reduced.

- ☐ A9M1. Minimize doors off or open operation to essential missions only.

A10. Items in an external basket are not properly secured.

- ☐ A10M1. Ensure security of external loads prior to mission.

A11. Undetected corrosion, stress crack, structural, limited, and/or unknown amount of aircraft health testing and monitoring being performed on current aircraft (fatigue, corrosion, airframe).

- ☐ A11M1. Ensure Maintenance Inspectors are conducting thorough reviews of aircraft maintenance logs.

A12. Undetected corrosion, and/or unknown amount of aircraft health testing

- ☐ A12M1. Ensure Maintenance Inspectors are conducting thorough reviews of aircraft maintenance logs.

### **E-Rappel Equipment System**

E1. Rappel equipment damaged or marginalized due to improper use.

- ☐ E1M1. Use education, supervision and expert quality assurance for following equipment use standards.
- ☐ E1M2. When in doubt about equipment's usage, retire it.

E2. Rappel equipment damaged or marginalized due to improper treatment

- ☐ E2M1. Use education, supervision and expert quality assurance for following equipment treatment standards.

E3. The use of non-approved equipment can compromise safety and reliability.

- ☐ E3M1. Maintain comprehensive and current list of approved rappel equipment.
- ☐ E3M2. Maintain current equipment standards for rappel equipment.
- ☐ E3M3. Only utilize approved rappelling equipment.
- ☐ E3M4. Design and implement a process for independent evaluation of equipment at individual rappel bases.

E4. Equipment is not properly inspected or documented.

- ☐ E4M1. Use training and supervision to ensure that equipment inspection and documentation standards (IHRG) are followed.
- ☐ E4M2. Design and implement a process for independent evaluation of equipment at individual rappel bases.
- ☐ E4M3. Implement and utilize rappeller records (RAPREC) database.

E5. Equipment is improperly rigged for a rappeller and spotter.

- ☐ E5M1. Develop and implement standard processes and procedures to include quality assurance.

- ☐ E5M2. Perform proper training.
- ☐ E5M3. Maintain currency and proficiency.
- ☐ E5M4. Develop and implement a span of control criteria for training, operations and program management.

E6. Improper use during the testing phase or improper use of newly approved equipment.

- ☐ E6M1. Develop and implement field-testing protocols.
- ☐ E6M2. Ensure equipment sent to the field for testing has adequate instructions for testing and use. (Moved to National Action Plan)

### **O-Operations System**

O1. Training in rappel procedures and instructional systems are non-standard and inconsistent throughout the agency leading to an increased likelihood of procedural errors.

There is a national training syllabus  
There is a lack of common verbiage by trainers.

- ☐ O1M1. Develop standard procedures and instructional systems.
- ☐ O1M2. Transfer and implement the standard procedures and delivery systems in training.
- ☐ O1M3. Utilize consolidated training as a method for standardization and quality assurance regionally and nationally.
- ☐ O1M4. Develop and implement a train the trainer program and implement.

O2. Mishaps that occur during training on the ground are not being reported in the SafeCom system leading to reduced information transfer. Incidents that happen on the ground, like on a tower, may not be reported.

- ☐ O2M1: Include all training mishaps regardless of location in the SafeCom system.

O4. The use of non-standard verbiage, direction, and interaction between spotter and pilot during rappel operations could lead to miscommunication.

- ☐ O4M1. Develop CRM training specific to pilot-spotter relationship.
- ☐ O4M2. CRM training should be done in the field with the current pilots including relief pilots and crew.

O5. Diversion from intended mission with limited information.

- ☐ O5M1. Obtain necessary information prior to accepting mission including frequencies, contacts, coordinates, additional aircraft involved and known hazards.

- ☐ O5M2. Ensure crew is "re-briefed" on new mission.

O6. Exposure to offsite landing accidents.

- ☐ O6M1. Follow standard procedures (high-low recon, power checks, verify load calculations as valid, etc.)
- ☐ O6M2. Site selection needs to be mutually agreed upon by pilot and spotter.

O7. Performing proficiency rappel in a community situation can create distraction; ie. Air show syndrome, competition.

- ☐ O7M1. Consider doing proficiency rappels at an offsite area where distractions are not present.

O8. Selection of an inadequate rappel site could result in an unsafe environment for rappellers and increased exposure to rotor strikes, entanglements, etc.

- ☐ O8M3. Select site so that the spotter can maintain positive visual contact with rappellers to the ground.
- ☐ O8M4. Follow rotor clearance standard in IHOG when descending below the canopy.
- ☐ O8M5. Recommend staying 50 feet above obstacles.

O12. Medical conditions can impair the ability of rappel personnel to safely rappel or spot and can lead to accidents or incidents.

- ☐ O12M1. Develop medical screen criteria for rappel personnel.

O13. The span of control of experienced to inexperienced rappellers may be higher than optimum allowing for compromised effectiveness of training and unacceptable risk.

- ☐ O13M1. Develop span of control of experienced to inexperienced rappellers.

O14. Rappellers on board helicopter during delivery of cargo, which translates, to longer exposure to rappellers during hover.

- ☐ O14M1. Follow risk management process to determine the decision on the number of personnel onboard.

O15. External rappel cargo could be dragged into an object or hit somebody.

- ☐ O15M1. The spotter to implement CRM visually confirming external load is clear of obstacles and communicating this to pilot.
- ☐ O15M2. Follow risk management processes to minimize overflying people or objects.

O16. The (external) letdown tape comes free from the cargo and could impact the aircraft.

- ☐ O16M1. Ensure equipment inspection are properly performed and documented.

- ☐ O16M2. Ensure procedures are followed in the rigging and deployment of the external cargo.

O16M3. Develop emergency procedures and perform recurrent crew-wide emergency procedures training.

O18. The (internal) letdown tape comes free from the cargo and could impact the aircraft.

- ☐ O18M1. Ensure equipment inspection are properly performed and documented.
- ☐ O18M2. Ensure procedures are followed in the rigging and deployment of the internal cargo.
- ☐ O18M3. Develop emergency procedures and perform recurrent crew-wide emergency procedures training.

O19. Exposure to rappellers during internal load operations due to denied living space.

- ☐ O19M1. Consider performing cargo operation separately.
- ☐ O19M2. Ensure that method of securing cargo is adequate for the size and weight of the cargo in the event of an accident.
- ☐ O19M3. Require agency-approved containers for hazardous materials.

O20. There is possible injury potential to spotter from moving cargo bags that exceed 125 pounds.

- ☐ O20M1. Do not load cargo bags with a weight greater than 125 pounds as per the rappel guide.

O22. Miscommunication during mission critical procedures results in inappropriate response; ie. rope cutting, re-entry.

- ☐ O22M1. Increase CRM procedure training.
- ☐ O22M2. Develop or refine challenge and response criteria between spotter and pilot.

O25. One and possibly two additional landings resulting in exposure to an accident.

- ☐ O25M1. Follow standard procedures (high-low recon, power checks, verify load calculations as valid, etc.)

- ☐ O25M2. Site selection needs to be mutually agreed upon by pilot and spotter.

026. A sense of urgency and additional distractions may exist during reconfigure.

- ☐ O26M1. Do additional proficiency training of reconfigure in or simulating an offsite environment with rotors turning.

- ☐ O26M2. Ensure that inexperienced personnel are mixed with experienced personnel in the rappel load.

027. Damage to doors may occur.

- ☐ O27M1. Comply with contractor door storage requirements.

- ☐ O27M2. Develop and follow training on proper removal and storage of equipment when flying with doors off.

028. During extended doors off flight, overexposure to environmental elements such as outside air temperatures can lead to compromised performance.

- ☐ O28M1. Consider use of sliding doors.

- ☐ O28M2. Personnel should wear appropriate apparel based on the potential exposure.

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\_\_\_\_ Do Not Occur

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Team Lead(s), National Quality Assurance Team

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Date

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Team Lead(s), National Quality Assurance Team

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Date

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\_\_\_ Do Not Occur

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Regional Forester, XX Region

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Date

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Director, Fire and Aviation Management, USFS

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Date